

Amendments to the Claims

Please cancel Claims 2-3 and 5-44. Please amend Claim 4. Please add Claims 45-65.
The Claim Listing below will replace all prior versions of the claims in the application:

Claim Listing

Claim 1 (original): A method of stimulating bone growth at a site in a subject in need of osteoinduction, said method comprising the step of administering to the site a therapeutically effective amount of an agonist of the non-proteolytically activated thrombin receptor.

Claims 2-3 (canceled)

Claim 4 (currently amended): A method of stimulating bone growth at a site in a subject in need of osteoinduction, said method comprising the step of administering to the site a therapeutically effective amount of an agonist of the non-proteolytically activated thrombin receptor, The method of Claim 1 wherein the agonist is a thrombin peptide derivative, or a physiologically functional equivalent thereof, comprising comprises a [[poly]]peptide represented by the following structural formula:



wherein R is a serine esterase conserved sequence comprising the amino acid sequence of SEQ ID NO: 2 (Cys-X₁-Gly-Asp-Ser-Gly-Gly-Pro-X₂-Val, wherein X₁ is Glu or Gln and X₂ is Phe, Met, Leu, His or Val), or a C-terminal truncated fragment of SEQ ID NO: 2, said fragment having at least six amino acids.

Claims 5-44 (canceled)

Claim 45 (new): The method of Claim 4, wherein the site is in need of a bone graft.

- Claim 46 (new): The method of Claim 4, wherein the site is a segmental gap in a bone, a bone void or at a non-union fracture.
- Claim 47 (new): The method of Claim 4, wherein the agonist is a peptide of between 12 and 23 amino acids.
- Claim 48 (new): The method of Claim 47, wherein the peptide comprises a *C*-terminal amide.
- Claim 49 (new): The method of Claim 4, wherein the peptide comprises the amino acid sequence Arg-Gly-Asp-Ala (SEQ ID NO: 3).
- Claim 50 (new): The method of Claim 49, wherein the peptide comprises the amino acid sequence Arg-Gly-Asp-Ala-Cys-X₁-Gly-Asp-Ser-Gly-Gly-Pro-X₂-Val (SEQ ID NO: 4), wherein X₁ is Glu or Gln and X₂ is Phe, Met, Leu, His or Val.
- Claim 51 (new): The method of Claim 48, wherein the peptide comprises the amino acid sequence Ala-Gly-Try-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val (SEQ ID NO: 5), or an *N*-terminal truncated fragment thereof, provided that zero, one or two amino acids at positions 1-9 in the agonist are conservative substitutions of the amino acid at the corresponding position of SEQ ID NO: 5.
- Claim 52 (new): The method of Claim 47, wherein the C-terminus of the peptide is unsubstituted.
- Claim 53 (new): A method of stimulating bone growth at a site in a subject in need of osteoinduction, said method comprising the step of administering to the site a therapeutically effective amount of a peptide of between 12 and 23 amino acids comprising the sequence Ala-Gly-Try-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-

Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val (SEQ ID NO: 5), or an *N*-terminal truncated fragment thereof.

- Claim 54 (new): The method of Claim 53 wherein the peptide is *C*-terminal amidated.
- Claim 55 (new): The method of Claim 54, wherein the peptide comprises the sequence Ala-Gly-Try-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val (SEQ ID NO: 6).
- Claim 56 (new): The method of Claim 53, wherein the peptide is Ala-Gly-Try-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val (SEQ ID NO: 5).
- Claim 57 (new): The method of Claim 51, wherein the agonist is administered in a pharmaceutical composition additionally comprising an implantable, biocompatible carrier.
- Claim 58 (new): The method of Claim 57, wherein the implantable, biocompatible carrier is an osteoconductive matrix.
- Claim 59 (new): The method of Claim 51, wherein the carrier comprises a polylactic acid/polyglycolic acid homopolymer or copolymer.
- Claim 60 (new): The method of Claim 4, wherein the subject is a farm animal, a companion animal or a laboratory animal.
- Claim 61 (new): A method of stimulating bone growth at a site in need of a bone graft in a subject, said method comprising the step of administering to the site a therapeutically effective amount of a *C*-terminal amidated peptide of 23 amino

acids comprising the sequence Ala-Gly-Try-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val (SEQ ID NO: 6).

- Claim 62 (new): A method of stimulating bone growth in a subject at a segmental bone gap, a bone void or a non-union fracture, said method comprising the step of administering to the bone gap, bone void or nonunion fracture, a therapeutically effective amount of a C-terminal amidated peptide of 23 amino acids comprising the sequence Ala-Gly-Try-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val (SEQ ID NO: 6).
- Claim 63 (new): A method of stimulating bone growth in a subject at an ectopic site, said method comprising the step of administering to the ectopic site a therapeutically effective amount of a C-terminal amidated peptide of 23 amino acids comprising the sequence Ala-Gly-Try-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val (SEQ ID NO: 6).
- Claim 64 (new): A method of stimulating bone growth in a subject at a site requiring dental or periodontal reconstruction, said method comprising the step of administering to the site a therapeutically effective amount of a C-terminal amidated peptide of 23 amino acids comprising the sequence Ala-Gly-Try-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val (SEQ ID NO: 6).
- Claim 65 (new): A method of stimulating bone growth in a subject at a site in need of a bone graft, said method comprising the step of administering to the site a therapeutically effective amount of a C-terminal amidated peptide of 23 amino acids comprising the sequence Ala-Gly-Try-Lys-Pro-Asp-Glu-Gly-Lys-Arg-Gly-Asp-Ala-Cys-Glu-Gly-Asp-Ser-Gly-Gly-Pro-Phe-Val (SEQ ID NO: 6).